E20640
First Edition / April 2023

TUF GAMING

TUF GAMING | LAPTOP

SERVICE MANUAL

More info:

ASUS

LIMITATION OF LIABILITY

Circumstances may arise where because of a default on ASUS' part or other liability, you are entitled to recover damages from ASUS. In each such instance, regardless of the basis on which you are entitled to claim damages from ASUS, ASUS is liable for no more than damages for bodily injury (including death) and damage to real property and tangible personal property; or any other actual and direct damages resulted from omission or failure of performing legal duties under this Warranty Statement, up to the listed contract price of each product.

ASUS will only be responsible for or indemnify you for loss, damages or claims based in contract, tort or infringement under this Warranty Statement.

This limit also applies to ASUS' suppliers and its reseller. It is the maximum for which ASUS, its suppliers, and your reseller are collectively responsible.

UNDER NO CIRCUMSTANCES IS ASUS LIABLE FOR ANY OF THE FOLLOWING: (1) THIRD-PARTY CLAIMS AGAINST YOU FOR DAMAGES; (2) LOSS OF, OR DAMAGE TO, YOUR RECORDS OR DATA; OR (3) SPECIAL, INCIDENTAL, OR INDIRECT DAMAGES OR FOR ANY ECONOMIC CONSEQUENTIAL DAMAGES (INCLUDING LOST PROFITS OR SAVINGS), EVEN IF ASUS, ITS SUPPLIERS OR YOUR RESELLER IS INFORMED OF THEIR POSSIBILITY.

SERVICE AND SUPPORT

Visit our multi-language website at https://www.asus.com/support/.

Table of Contents

Disclaimer

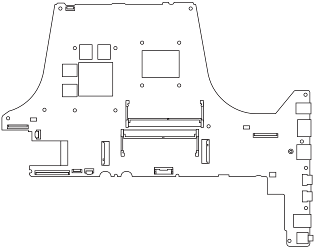
ASUS is not responsible for direct, indirect, intentional or unintentional damages resulting from improper installation and operation.

Safety precautions

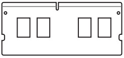
- Keep liquids or moisture away from your Notebook PC before installing or removing any components.
- Ensure to place your Notebook PC on a stable surface before installing or removing any components.
- Detach the clip or flap before removing the signal cables to prevent damage.
- Disconnect the power plug by pulling the plug evenly to avoid damage. Ensure to connect the signal cables in the correct orientation.
- Disconnect all power cables and remove the battery pack (if applicable) before cleaning your Notebook PC with liquid detergent to avoid risk of electric shock.
- Disconnect all power cables and remove the battery pack (if applicable) before installing or removing any components. Ensure to read and follow the instructions in the manual.

- Before handling components, use a grounded wrist strap or touch a safely grounded object to avoid damaging them due to static electricity.
- Keep liquids or moisture away from your Notebook PC to avoid short circuits.
- Hold components by the edges to avoid touching the ICs.
- Ensure to properly install all the components before connecting the AC power.
- Do not use power adapters or batteries from other devices to reduce the risk of injury to persons due to fire or explosion. Use only certified power adapters or batteries supplied by the manufacturer or authorized retailers.
- Ensure to install the correct screw models on your Notebook PC to prevent damage.

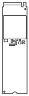
Major components



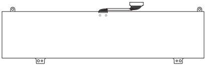
Motherboard with ports and connectors



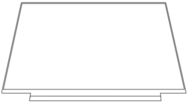
RAM module



SSD module



Battery and power connector



Display panel module

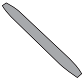
NOTE:

- The illustrations are for reference only.
- The maintenance procedures described in this manual depend on the model configuration and may not reflect the entire servicing process. For servicing those components that are not covered in this manual, please visit an authorized service center for further assistance.

Installation tools



Screwdriver



Plastic blade



Tweezers

Removing the bottom cover

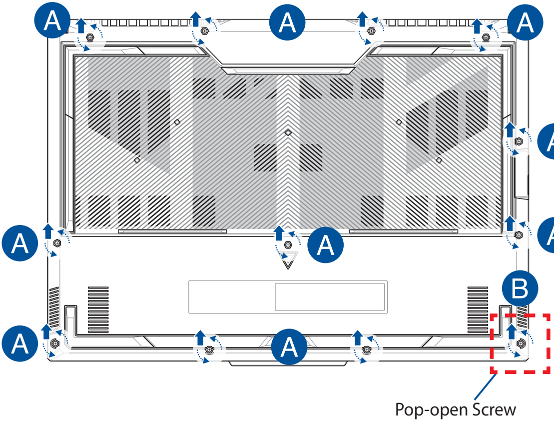
IMPORTANT! System power will be cut off automatically upon removal of the bottom cover. To restore power, reattach the bottom cover securely and connect the AC power adapter to your Notebook PC after the servicing is complete.

NOTE: The appearance of your Notebook PC's bottom view may vary per model.

A. Remove the screw(s) from the Notebook PC's bottom cover.

B. Loosen the Pop-open Screw without removing the screw from the cover.

C. Pull out the bottom cover and remove it completely from your Notebook PC.

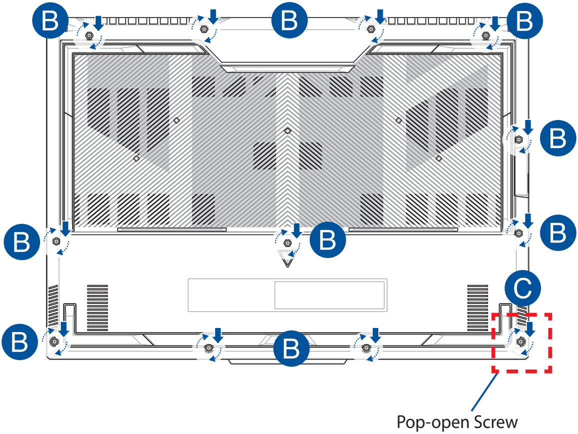


To reattach the bottom cover:

A. Align and reattach the bottom cover.

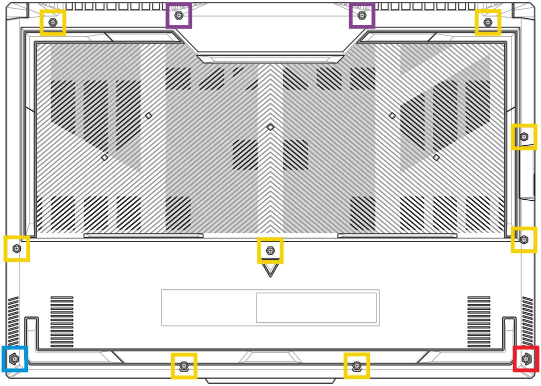
B. Secure the cover using the screw(s) you removed earlier.

C. Tighten the Pop-open Screw.



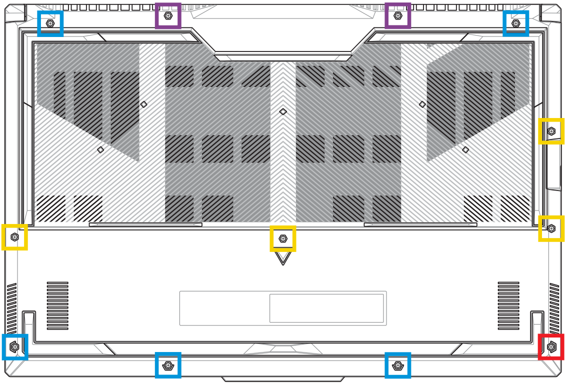
Cover screw map

15" model



- M2.5 X 12L (2PCS)
- M2.5 X 9.5L (8PCS)
- M2.5 X 8L (1PC)
- M2.5 X 8L (1PC Pop-open Screw)

17" model



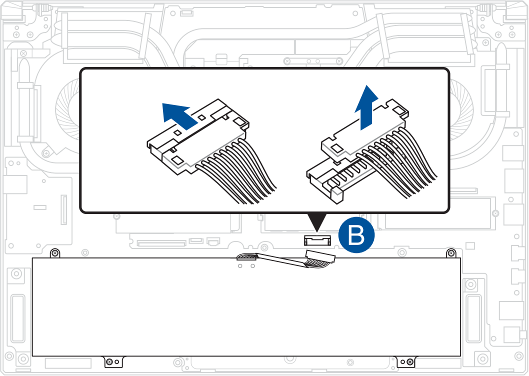
- M2.5 X 13L (2PCS)
- M2.5 X 10L (4PCS)
- M2.5 X 8L (5PCS)
- M2.5 X 8L (1PC Pop-open Screw)

Disconnecting the battery

A. Remove the bottom cover.

NOTE: For more details, refer to the *Removing the bottom cover* section in this manual.

B. Disconnect the cable from the battery connector.



NOTE: The illustration is for reference only.

To connect the battery, align and connect the cable to the battery connector before you reattach the bottom cover.

Installing a RAM module

Upgrade the memory capacity of your Notebook PC by installing a RAM (Random Access Memory) module in the memory module compartment. The following steps show you how to install a RAM module into your Notebook PC:

WARNING! Disconnect all the connected peripherals, any telephone or telecommunication lines and power connector (such as external power supply, battery pack, etc.) before removing the bottom cover.

IMPORTANT! Visit an authorized service center or retailer for information on RAM module upgrades for your Notebook PC. Purchase RAM modules from authorized retailers of this Notebook PC to ensure maximum compatibility and reliability.

NOTE:

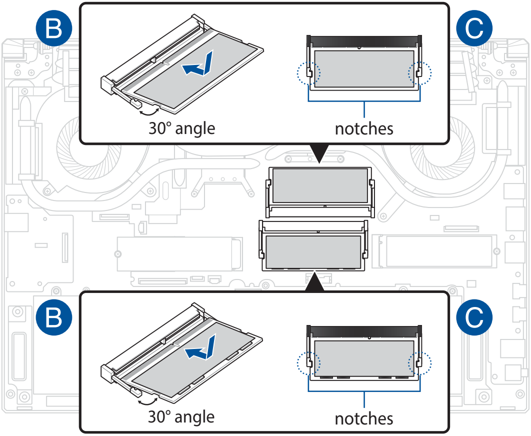
- The appearance of your Notebook PC's bottom view and RAM module may vary per model but the RAM module installation remains the same.
- It is recommended that you install the RAM module under professional supervision. You may also visit an authorized service center for further assistance.

A. Remove the bottom cover.

NOTE: For more details, refer to the *Removing the bottom cover* and *Disconnecting the battery* sections in this manual.

B. Align and insert the RAM module into the RAM module slot.

C. Push down the RAM module until it clicks in place.



Installing an M.2 card

Refer to the following steps when installing a compatible M.2 card in your Notebook PC:

IMPORTANT! Purchase your M.2 card from authorized retailers of this Notebook PC to ensure maximum compatibility and reliability.

WARNING! Disconnect all the connected peripherals, any telephone or telecommunication lines and power connector (such as external power supply, battery pack, etc.) before removing the bottom cover.

NOTE:

- The appearance of your Notebook PC's bottom view and M.2 card may vary per model but the module installation remains the same.
- It is recommended that you install the M.2 card under professional supervision. You may also visit an authorized service center for further assistance.
- The M.2 2280 slot does not support M.2 SATA SSD.

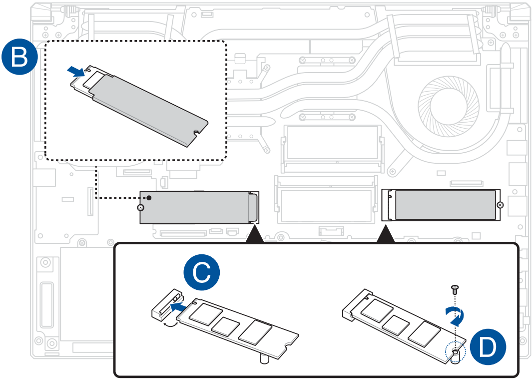
A. Remove the bottom cover.

NOTE: For more details, refer to the *Removing the bottom cover* and *Disconnecting the battery* sections in this manual.

B. (optional) Insert the M.2 card into the wrap in the orientation shown in the illustration below.

C. Align and insert the M.2 card into the module slot.

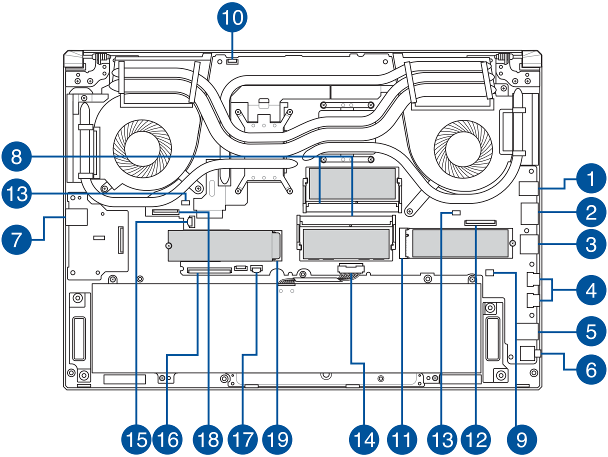
D. Secure the M.2 card in place using the bundled screw(s).



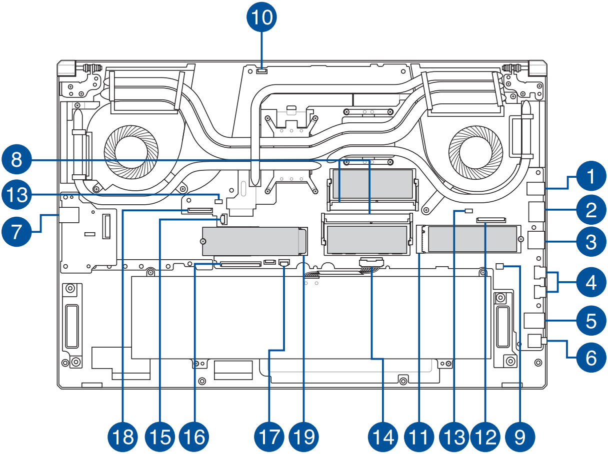
Wiring and connection diagrams

NOTE: The illustration is for reference only.

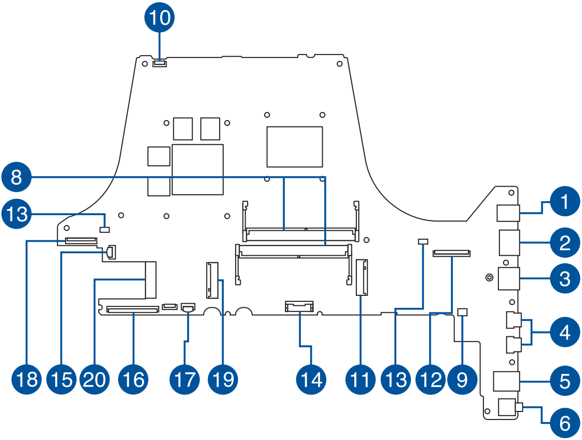
15" model



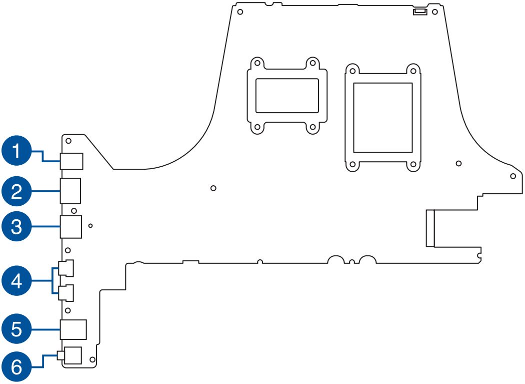
17” model



Top View



Bottom View



1. Power supply connector
2. LAN connector
3. HDMI connector
4. USB Type-C® connector
5. USB Type-A connector
6. Audio connector
7. USB Type-A connector
8. DDR socket
9. Speaker connector
10. LED board connector
11. Second SSD connector
12. LVDS connector
13. Fan connector
14. Battery connector
15. Keyboard backlight connector
16. Keyboard membrane connector
17. Touchpad connector
18. USB 3.0 connector
19. Main SSD connector
20. WLAN connector